## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Roland Contreras, et al.

Examiner:

Unassigned

Serial No.:

To Be Assigned

**Art Unit:** 

Unassigned

Filed:

Herewith

Docket:

13748Z

For:

PROTEIN GLYCOSYLATION

Dated:

September 25, 2003

MODIFICATION IN METHYLOTROPHIC

**YEAST** 

Commissioner for Patents P. O. Box 1450 Alexandria, VA 22313-1450

## **INFORMATION DISCLOSURE STATEMENT**

Sir:

In accordance with the provisions of 37 C.F.R. §§1.97 and 1.98, it is respectfully requested that the following disclosures, which are listed on the attached form PTO-1449 be made of record in the above-identified case.

## **CERTIFICATE OF MAILING BY "EXPRESS MAIL"**

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I hereby certify that this is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, P. O. Box 1450, Alexandria, VA 22313-1450.

Dated: September 25, 2003

Pursuant to 37 C.F.R. §1.98(d), copies of the above-listed publications are not provided, as the references were previously submitted to the Examiner in connection with the parent case, Serial Number: 09/896,594 filed on June 29, 2001. Reference Numbers 10 and 14-20 were cited by the Examiner in the parent case, Serial Number 09/896,594, therefore copies of these references are not provided.

Consideration of this Information Disclosure Statement is respectfully requested, since the art provided may be material to the examination of the present application as defined under 37 C.F.R. §1.56.

Inasmuch as this Information Disclosure Statement is being mailed prior to the issuance of a first Official Action, no fee or certification is required.

Respectfully submitted,

Frank S. DiGiglio

Registration No. 31,346

SCULLY, SCOTT, MURPHY & PRESSER 400 Garden City Plaza Garden City, New York 11530 (516) 742-4343

FSD/XZ:ab

| Form PTO-1449 U.S. DEPARTMENT OF COMMERCE (REV. 7-80)PATENT AND TRADEMARK OFFICE  LIST OF PRIOR ART  CITED BY APPLICANT |          |  |            |                                    | ty. Docket No.<br>3748Z                  | Serial No.<br>To Be Assigned |                  |                                 |      |    |
|---|----------|--|------------|------------------------------------|--|------------------------------|------------------|---------------------------------|------|----|
|   |          |  |            | Applicant Roland Contreras, et al. |  |                              |                  |                                 |      |    |
| (Use several sheets if necessary)   |          |  |            | Filing Date<br>Herewith            |  |                              | Group            |                                 |      |    |
| U.S. PAT  | ENT I    | DOCUMENTS  |            |                                    |  |                              |                  |                                 |      |    |
| EXAMINER<br>INITIAL*  |          | DOCUMENT NUMBER  | DATE       |                                    | NAME                                     | CLASS                        | SUBCLASS         | FILING DATE<br>(if appropriate) |      |    |
|   | 1        | 5,705,616  | 1/6/1998   | Lehle et al.                       |  |                              |                  |                                 |      |    |
|   | 2        | 5,135,854  | 8/4/1992   | MacKay et al.                      |  |                              |                  |                                 |      |    |
|   | <u> </u> |  |            |                                    |  |                              |                  |                                 |      |    |
| FOREIGI   | N PAT    | ENT DOCUMENTS  |            |                                    |  |                              |                  |                                 |      |    |
|   |          | DOCUMENT NUMBER  | DATE       |                                    | COUNTRY                                  | CLASS                        | SUBCLASS         | TRANSLATION                     |      |    |
|   |          |  |            |                                    |  |                              |                  | YES                             |      | NO |
|   | 3        | 0.22/207   | 10/04/100  |                                    |  |                              |                  |                                 |      |    |
| · · · · · · · · · · · · · · · · · · ·   | 3        | 8-336387   | 12/24/1996 | <u>Б</u>                           | Japan                                    |                              |                  | !<br>                           |      |    |
|   |          |  |            |                                    |  | <u> </u>                     |                  |                                 |      |    |
| OTHER P   | NOR A    | ART (Including Author,   |            |                                    |  |                              |                  |                                 |      |    |
|   | 4        | Maras, M., et al. (2000) "Molecular Cloning and Enzymatic Characterization of a Trichoderma Reesi, 1, 2 – α-D-Mannosidase", Journal of Biotechnology 77: 255-263   |            |                                    |  |                              |                  |                                 |      |    |
|   | 5        | Bretthauer, R. K., et al. (1999) "Glycosylation of <i>Pichia pastoris</i> -derviced Proteins", <u>Biotechnol. Appl Biochem</u> 30: 193-200   |            |                                    |  |                              |                  |                                 |      |    |
|   | 6        | Kukuruzinska, M. A., et al. (1987) "Protein Glycosylation in Yeast", Ann. Rev. Biochem 56: 915-944   |            |                                    |  |                              |                  |                                 |      |    |
|   | 7        | Chiba, Y., et al. (1998) "Production of Human Compatible High Mannse-Type (Man <sub>5</sub> GlcNAc <sub>2</sub> ) Sugar Chains in Saccharomyces Cerevisiae", <u>The Journal of Biological Chemistry</u> 273 (41): 26298-26304  |            |                                    |  |                              |                  |                                 |      |    |
|   | 8        | Maras, M., et al. (1999) "In Vivo Synthesis of Complex N-Glycans by Expression of Human N-Acetylglucosaminyltransferase I in the Filamentous Fungus Trichoderma Reesei, <u>FEBS Letters</u> 452: 365-370   |            |                                    |  |                              |                  |                                 |      |    |
|   | 9        | Nakanishi-Shindo, Y., et al. (1993) "Structure of the N-Linked Oligosaccharides That Show the Complete Loss of α-1, 6-Polymannose Outer Chain from och1, och1 mnn1, and och1 mnn1 alg3 Mutants of Saccharomyces Cerevisiae", The Journal of Biological Chemistry 268 (35): 26338-26345 |            |                                    |  |                              |                  |                                 |      |    |
| EXAMINER  |          |  |            | DA                                 | ATE CONSIDERED                           |                              |                  |                                 |      |    |
|   |          | l if reference considered, wh<br>. Include copy of this form v   |            |                                    | conformance with MPEP 609, to applicant. | ; draw line thr              | ough citation if | not in confo                    | rman | СӨ |

| Form PTO-1449  U.S. DEPARTMENT OF COMMERCE (REV. 7-80)PATENT AND TRADEMARK OFFICE  LIST OF PRIOR ART  CITED BY APPLICANT  (Use several sheets if necessary) |           |  |   |                                    | ly. D cket N .<br>3748Z                 | Serial No. To Be Assigned |                   |                                 |                                       |  |
|---|-----------|--|---|------------------------------------|---|---------------------------|-------------------|---------------------------------|---------------------------------------|--|
|   |           |  |   | Applicant Roland Contreras, et al. |   |                           |                   |                                 |                                       |  |
|   |           |  |   |                                    | i <b>ng Date</b><br>erewith             | Group                     |                   |                                 |                                       |  |
| U.S. PATI   | ENT C     | OCUMENTS   |   |                                    |   |                           |                   |                                 |                                       |  |
| EXAMINER<br>INITIAL*  |           | DOCUMENT NUMBER  | DATE                                      |                                    | NAME                                    | CLASS                     | SUBCLASS          | FILING DATE<br>(if appropriate) |                                       |  |
|   | 10        | US-<br>2002/0137134/A1   | 09-2002                                   | G                                  | erngross                                |                           |                   |                                 |                                       |  |
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| FOREIGN   | I PAT     | ENT DOCUMENTS  | •   |                                    |   |                           |                   |                                 |                                       |  |
|   |           | DOCUMENT NUMBER  | DATE                                      |                                    | COUNTRY                                 | CLASS                     | SUBCLASS          | TRANSLATION                     |                                       |  |
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| OTHER PR  | IOR A     | RT (Including Author,  | Title, Date, Pertir                       | nent                               | Pages, Etc.)                            |                           |                   |                                 |                                       |  |
|   | 11        | Martinet, W., et al. (1998) "Modification of the Protein Glycosylation Pathway in the Methylotrophic Yeast Pichia Pastoris", <u>Biotecnoogy Letters</u> 20(12):1171-1177   |   |                                    |   |                           |                   |                                 |                                       |  |
|   | 12        | Maras, M., et al. (1997) "In Vitro Conversation of the Carbohydrate Moiety of Fungal Glycoproteins to Mammalian-Type Oligosaccharides", <u>Eur. J. Biochem.</u> 249:701-7707   |   |                                    |   |                           |                   |                                 |                                       |  |
|   | 13        | Laroy, W., et al. (2000) "Cloning of <i>Trypanosoma cruzi</i> trans-Sialidase and Expression in <i>Pichia pastoris</i> ",<br>Protein Expression and Purification 20: 389-393   |   |                                    |   |                           |                   |                                 |                                       |  |
|   | 14        | Inoue et al. Molecular cloning and nucleotide sequence of the 1,2-alpha-D-mannosidase gene, msdS, from   |   |                                    |   |                           |                   |                                 |                                       |  |
|   | 15        | Aspergillus saitoi and expression of the gene in yeast cells. Biochim. Biophys. Acta 1253:141-145, 1995  |   |                                    |   |                           |                   |                                 |                                       |  |
|   | 13        | Herscovics et al. Isolation of a mouse Golgi mannosidase cDNA, a member of a gene family conserved from yeast to mammals. J. Biol. Chem. 269:9864-9871, 1994   |   |                                    |   |                           |                   |                                 |                                       |  |
|   | 16        | Lal et al. Isolation and expression of murine and rabbit cDNAs encoding an alpha 1,2-mannosidase involved  |   |                                    |   |                           |                   |                                 |                                       |  |
|   |           | in the processing of asparagines-linked oligosaccharides. J. Biol. Chem. 269-9872-9881, 1995.  |   |                                    |   |                           |                   |                                 |                                       |  |
|   | 17        | Trombetta et al. Endoplasmic recticulum glucosidase II is composed of a catalytic subunit, conserved from yeast to mammals, and a tightly bound noncatalytic HDEL-containing subunit. J. Biol. Chem. 271:27509-27516, 1996 |   |                                    |   |                           |                   |                                 |                                       |  |
| EXAMINER  |           | 1  |   | D/                                 | ATE CONSIDERED                          |                           |                   |                                 |                                       |  |
| * EXAMINER  | : Initial | if reference considered, wh  | nether or not citation with next communic | is in                              | conformance with MPEP 609 to applicant. | ; draw line thi           | rough citation if | not in confo                    | rmance                                |  |

| LIST OF PRIOR ART CITED BY APPLICANT  (Use several sheets if necessary) |       |  |                 | Atty. D<br>13748                   |                   | Serial No.  To Be Assigned   |                                |                                 |                |  |
|---|-------|--|-----------------|------------------------------------|-------------------|------------------------------|--------------------------------|---------------------------------|----------------|--|
|   |       |  |                 | Applicant Roland Contreras, et al. |                   |                              |                                |                                 |                |  |
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| U.S. PAT  | ENT C | OCUMENTS   |                 |                                    |                   |                              |                                |                                 |                |  |
| EXAMINER<br>INITIAL*  |       |  | DATE            | NAME CLASS                         |                   |                              | SUBCLASS                       | FILING DATE<br>(if appropriate) |                |  |
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| OTHER D   |       | RT (Including Author, Ti   | Ho Data Portin  | ont Page                           | s Etc.)           |                              |                                |                                 |                |  |
| OTTICK FI   | 18    | Ngo et al. Computation protein folding probler 491-495.  | nal complexity, | protein s                          | tructure predicti | on, and the L et al., Eds.), | evinthal Para<br>Birkhauser, B | dox. IN: Ti<br>oston, 199       | he<br>4, pages |  |
|   | 19    | Rudinger, J. Characteristics of the amino acids as components of a peptide hormone sequence. In: Peptide hormones (Parsons, J.A., Ed.), University Park Press, Baltimore, 1976, pages 1-7. |                 |                                    |                   |                              |                                |                                 |                |  |
|   | 20    | Invitrogen catalog, 1998. Yeast expression, page 22.   |                 |                                    |                   |                              |                                |                                 |                |  |
|   |       |  |                 |                                    |                   |                              |                                |                                 |                |  |
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